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| 09/641,553 | 08/17/2000 | YI-MIN WANG | 1018.050US3 | 6337 |
| 23460 | 7590 | 05/14/2004 | EXAMINER | |
| LEYDIG VOIT & MAYER, LTD TWO PRUDENTIAL PLAZA, SUITE 4900 180 NORTH STETSON AVENUE CHICAGO, IL 60601-6780 | | | NAJJAR, SALEH | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2157 | |

DATE MAILED: 05/14/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/641,553

Applicant(s)

WANG ET AL.

Examiner

Saleh Najjar

Art Unit

2157

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7,8,10,13 and 16-31 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 7,8,10,13 and 18-31 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☒ Claim(s) 16 and 17 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. This action is responsive to the amendment filed on February 6, 2004. Claims 1-6, - 11-12, and 14-15 were canceled. Claims 7, 8, 10, and 13 were amended. Claims 18-31 were newly submitted. Claims 7, 8, 10, 13, and 16-31 are pending.

2. Due to the reasons given in the previous office action, restriction made in the previous office action is made final. Because these inventions are distinct for the reasons given in the previous office action and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7, 8, 10, 13, and 18-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson et al., U.S. Patent No. 6,311,209 in view of Novaes, U.S. Patent No. 6,507,863.

Olson teaches the invention substantially as claimed including client host migration among a group of clients sharing the same application (see abstract).

As to claim 7, Olson teaches a distributed system including a plurality of redundant components, a method for performance by a node first redundant component, comprising:

transmitting information particular to the first client to other clients in the plurality of clients, the information relating to one or more criteria according to which a leader component is to be determined (see figs. 1-5; col. 8, Olson discloses that a player ID of

a client that is admitted into the application session is transmitted to all other participants);

receiving information from the other components particular to the other components and relating to the one or more criteria by according to which the leader node component is to be determined (see figs. 1-5; col. 8, Olson discloses that a player ID of a client that is admitted into the application session is transmitted to all other participants); and

determining whether the first participant is the leader client by comparing the information particular to the first client with the information particular to the other client participants (see col. 11, Olson discloses that in response to host migration request message received at all participating clients, each of the clients assign host duties to the node that has the lowest numeric identification).

Olson does not explicitly teach the limitation of "redundant components". Olson does teach that system described is distributed processing synchronizing system (see col. 1).

However, Novaes teaches a distributed computing environment having a plurality of computing nodes including leader nodes (see abstract). Novaes teaches redundant components (see col. 1-5, Novaes discloses that the distributed processing nodes are employed in a fault tolerant environment).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Olson by specifying the client nodes as redundant components as taught by Novaes to provide the functionality of preserving current application state information or fault tolerance.

As to claim 8, Olson teaches the method of claim 7, further comprising periodically repeating the method (see col. 8-11).

As to claim 10, Olson teaches the method of claim 7, wherein transmitting the information particular to the first component comprises transmitting Unique ID information particular to the node first component, and the receiving the information particular to the other components comprises receiving Unique ID information particular to the other nodes components.

Olson does not explicitly teach the limitation of "age information". Olson does teach that numeric identifications in ascending numerical order are assigned to each new admitted member of the application session and that the table of IDs are checked at each client in response to migration request message received where the host is determined based on the lowest numerical identification indicating that the member is the oldest existing application member (see col. 10-12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Olson by specifying the identification information exchanged among a group as age information since the same functionality is achieved.

As to claim 13, Olson teaches a system comprising:

a plurality of client participants; and a leader client participant elected from the plurality of client participants by way of a weak leader election approach (see col. 8-11).

Olson does not explicitly teach the limitation of "redundant components". Olson does teach that system described is distributed processing synchronizing system (see col. 1).

However, Novaes teaches a distributed computing environment having a plurality of computing nodes including leader nodes (see abstract). Novaes teaches redundant components (see col. 1-5, Novaes discloses that the distributed processing nodes are employed in a fault tolerant environment).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Olson by specifying the client nodes as redundant components as taught by Novaes to provide the functionality of preserving current application state information or fault tolerance.

As to claim 18, Olson teaches the method of claim 10 wherein the determining whether the first client participant is the leader participant comprises determining whether the first participant is an oldest participant (see col. 8-11).

As to claim 19, Olson teaches the system of claim 13 wherein the leader participant elected by way of the weak leader election approach comprises an oldest participant in the plurality of participants (see col. 8-11).

As to claim 20, Olson teaches a computer system including a plurality of client participants, a method for electing a leader participant, comprising:

exchanging leader election criteria information among the plurality of redundant components; and at each component in the plurality of redundant components (see col. 8-11);

(a) determining whether the participant is the leader participant, based on the leader election criteria information; and (b) repeating the determining whenever the component detects an occurrence of a migration request possibly affecting the leader participant (see col. 11, Olson discloses that in response to host migration request message received at all participating clients, each of the clients assign host duties to the node that has the lowest numeric identification).

Olson does not explicitly teach the limitation of “detecting a occurrence of a failure”. Olson does teach that a host change packet is detected which indicates that the leader will be going offline (see col. 11-12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Olson by specifying the change in leader status as a failure detection since the same functionality of detecting a distributed processing failure is achieved.

Olson does not explicitly teach the limitation of “redundant components”. Olson does teach that system described is distributed processing synchronizing system (see col. 1).

However, Novaes teaches a distributed computing environment having a plurality of computing nodes including leader nodes (see abstract). Novaes teaches redundant components (see col. 1-5, Novaes discloses that the distributed processing nodes are employed in a fault tolerant environment).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Olson by specifying the client nodes as redundant components as taught by Novaes to provide the functionality of preserving current application state information or fault tolerance.

As to claim 21, Olson teaches method of claim 20, further comprising:
periodically repeating the method (see col. 8-12).

As to claim 22, Olson teaches the method of claim 20 wherein the exchanging leader election criteria information comprises exchanging unique ID information (see col. 8-12).

As to claim 23, Olson teaches the method of claim 22 wherein the determining whether the participant is the leader participant comprises:

determining whether the component is an oldest component; and
if the component determines that it is the oldest component, concluding that the component is the leader component (see col. 8-12).

As to claim 24, Olson teaches the method of claim 22 wherein the exchanging age information includes exchanging information regarding how long each component in the plurality of redundant components has been online (see co. 8-12).

As to claims 25-26, Olson teaches the method of claim 20 above.

Olson does not teach the claimed limitation wherein the redundant components are redundant instances of a daemon wherein the daemon is a system management daemon.

However, Novaes teaches a distributed computing environment having a plurality of computing nodes including leader nodes (see abstract). Novaes teaches where the processor nodes include system management processing daemons (see col. 6, Novaes discloses that the distributed processing nodes include software daemons).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Olson by specifying the client nodes as software daemons as taught by Novaes to provide automatic fault tolerance and preserve state information.

As to claims 27, Olson teaches the method of claim 25.

Olson fails to teach the limitation wherein the daemon is a power line monitoring daemon.

However, "Official Notice" is taken that the concept and advantages of using daemon processes or agent processes to monitor a powerline is old and well known in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Olson by specifying a powerline monitoring daemon to prevent network failure.

As to claims 28-31, Olson teaches the method of claim 20.

Olson fails to teach the limitation wherein the redundant components are redundant executing processes redundant class objects, wherein the redundant components are redundant devices in an automation system, and wherein the redundant components are redundant nodes in a network.

However, Novaes teaches a distributed computing environment having a plurality of computing nodes including leader nodes (see abstract). Novaes teaches wherein the redundant components are redundant executing processes redundant class objects, wherein the redundant components are redundant devices in an automation system, and wherein the redundant components are redundant nodes in a network (see col. 6, Novaes discloses that the distributed processing nodes include software daemons).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Olson by specifying the client nodes as software daemons as taught by Novaes to provide automatic fault tolerance and preserve state information.

5. Applicant's arguments filed February 6, 2004 have been fully considered but they are not persuasive.

In the remarks, the applicant argues in substance that the host client of Olson is not analogous to the leader representing a currently active component in applicant's invention. In response, no language is found in the claims that the leader is a currently active component.

The applicant also argues that Olson does not involve a weak leader election scheme as in defined in the specification. In response, Olson reads on the claimed language of weak leader.

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6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saleh Najjar whose telephone number is (703) 308-7613. The examiner can normally be reached on Monday-Friday from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, *Ario Etienne*, can be reached on (703) 308-7562. The fax phone number for this Group is (703) 308-9052.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-9600. The central official fax number for the group is (703) 872-9306.



Saleh Najjar

Primary Examiner / Art Unit 2157